

**ABSTRACT OF THE DISCLOSURE**

Simultaneous tolerance of system nonlinearities and chromatic dispersion in an optical transmission system using return-to-zero (RZ) duobinary signaling is achieved by filtering the received signal in the optical domain with a bandpass filter having a bandwidth  $B$  substantially equal to the bit-rate of the RZ-duobinary data signal. The use of an optical bandpass filter in a receiver for RZ-duobinary signals maintains the expected tolerance of system nonlinearities and simultaneously increases significantly the chromatic dispersion tolerance of the signals.